REMARKS

In view of the following reasoning for allowance, the applicants hereby respectfully request further examination and reconsideration of the subject application.

A. Claim Rejection Under 35 USC 112

Claim 36 was rejected under 35 USC 112, first paragraph, for failing to comply with the written description requirement. Claim 36 is a dependent claim of Claim 33 "wherein scaling the source image or the composite image scales paint brush function". The applicants contend that scaling of objects in a graphical user interface is well known to people with ordinary skill in the art, so that no detailed information should be required on this point.

B. The 35 USC 101 Rejection of Claim 28.

Claim 28 was rejected under 35 USC §101 as allegedly being directed to non-statutory subject matter. More particularly, the Examiner stated that a "computer-readable medium" is non-statutory. While the applicants do not admit to and do not believe that the aforementioned "computer-readable medium" is non-statutory subject matter, this claim has been amended in order to overcome this rejection. Accordingly, it is kindly requested that the rejection of this claim be reconsidered.

C. The 35 USC 103 Rejection of Claims 1, 4, 7-13, 16, 18-23, 28, 29 and 30-37.

Claims 1, 4, 7-13, 16, 18-23, 28, 29 and 30-37 were rejected under 35 USC 103(a) as being unpatentable over Dayton in view of Xu, US 2003/0210407. The Examiner contended that Dayton teaches all the elements of the applicants claims but does not teach the applicant's image stack. The Examiner contended, however, that

Xu teaches this feature. The applicants respectfully disagree with this contention of obviousness.

In order to deem the applicants' claimed invention unpatentable under 35 USC 103, a prima facie showing of obviousness must be made. To make a prima facie showing of obviousness, all of the claimed elements of an applicants' invention must be considered, especially when they are missing from the prior art. If a claimed element is not taught in the prior art and has advantages not appreciated by the prior art, then no prima facie case of obviousness exists. The Federal Circuit court has stated that it was error not to distinguish claims over a combination of prior art references where a material limitation in the claimed system and its purpose was not taught therein (*In Re Fine*, 837 F.2d 107, 5 USPQ2d 1596 (Fed. Cir. 1988)).

The applicants' claimed invention employs an "image stack" in easily combining individual images into an enhanced composite image. An *image stack* is a set of identically sized registered images (e.g., the same pixel in each image represents more or less the same thing and inherently they are taken from the same point of view) that may originate from any stationary still or video camera. One way to envision an image stack is as a three dimensional (3D) collection of pixels defined by a set of images (or a short video). In the 3D pixel set, the normal *X* and *Y* dimensions define the coordinates of a single image. The *Z* (or time) dimension defines which image in the stack (or what point in time in a video). A *span* of pixels is the set of all pixels at some (*X*, *Y*) location in all images of the image stack. Filters may be applied to the 3D image stack, or a portion thereof, to create one or more new 2D intermediate images. A filter is a function that operates on the 3D image stack to create a 2D image. An *intermediate image* is one created by running a filter on the image stack. (see Summary)

In contrast, Dayton teaches a technique for applying filters to a single image. Nowhere does Dayton teach an image stack "comprising a stack of original images taken from the same point of view, wherein the pixel position of each original image in the image stack is defined in a three dimensional coordinate system, and wherein

two dimensions describe the dimensions of each image in the image stack, and the third dimension describes the time an image was captured..."

Xu's technique performs image processing by artificially forming feature points using light emitting diodes for finding correspondence between a plurality of images. Xu's technique uses multiple cameras from different points of view and correlates the feature points in a plurality of images with each other to determine the position and orientation of the cameras (see FIG. 3 and Abstract). Xu also does not teach an image stack "comprising a stack of original images taken from the same point of view, wherein the pixel position of each original image in the image stack is defined in a three dimensional coordinate system, and wherein two dimensions describe the dimensions of each image in the image stack, and the third dimension describes the time an image was captured..."

Neither Dayton nor Xu teach the applicants' claimed image stack which may be used for a variety of applications such as, for example, creating high dynamic range images, combining images captured under different lighting conditions, removing objects from images, and combining images captured at multiple points in time or with different focal lengths.

Additionally, the Dayton and Xu references do not teach the advantageous features of the applicants' claimed invention such as being able to create a variety of special effects using the image stack. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Dayton in view of Xu. As such, it is respectfully requested that Claims 1, 4, 7-13, 16, 18-23, 28, 29 and 30-37 be allowed based on the following claim language:

> " A computer-implemented process for creating a composite image, comprising using a computer to perform the following process actions:
> **inputting an image stack comprising a stack of original images taken from the same point of view, wherein the pixel position of each original image in the image stack is defined in a three dimensional coordinate system, and wherein two dimensions describe the**

dimensions of each image in the image stack, and the third dimension describes the time an image was captured;

applying one or more filters to the image stack to create one or more new intermediate images;

selecting one of the original images in the image stack or an intermediate image as a source image; and

selecting pixels from the source image to be added to a composite image to create a final composite image."

D. **The 35 USC 103 Rejection of Claims 2, 5, and 6.**

Claims 2, 5 and 6 were rejected under 35 USC 103(a) as being unpatentable over Dayton and Xu (as discussed above) in further view of Wise (U.S. Patent No. 6,130,676), herein after Wise. The Examiner contended that though Dayton and Xu do not teach various features of these claims, Wise teaches these features. The applicants respectfully disagree with this contention of obviousness.

The applicants' claimed invention employs an "image stack" in easily combining individual images into an enhanced composite image. One way to envision an image stack is as a three dimensional (3D) collection of pixels defined by a set of images (or a short video). In the 3D pixel set, the normal *X* and *Y* dimensions define the coordinates of a single image. The *Z* (or time) dimension defines which image in the stack (or what point in time in a video). Inherantly the images are taken from the same point of view because the pixels in each image more or less represent the same thing (see Summary).

Neither Dayton nor Xu teach an image stack wherein images are taken from the same point of view. Additionally, the Dayton and Xu references do not teach the advantageous features of the applicants' claimed invention such as being able to create a variety of special effects using the image stack. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Dayton in view of Xu and Wise. As such, it is respectfully requested that Claims 2, 5 and 6 be allowed based on the aforementioned claim language.

E. **The 35 USC 103 Rejection of Claims 3 and 17.**

Claims 3 and 17 were rejected under 35 USC 103(a) as being unpatentable over Dayton and Xu (as discussed above) in further view of Joidon (U.S. Patent No. 5,493,419), herein after Joidon. The Examiner contended that though Dayton and Xu do not teach applying a slice filter, Joidon teaches this feature. The applicants respectfully disagree with this contention of obviousness.

Neither Dayton nor Xu teach the applicants' claimed image stack which may be used for a variety of applications such as, for example, creating high dynamic range images, combining images captured under different lighting conditions, removing objects from images, and combining images captured at multiple points in time or with different focal lengths.

Joidon also does not teach the applicants' claimed image stack.

Additionally, the Dayton, Xu and Joidon references do not teach the advantageous features of the applicants' claimed invention such as being able to create a variety of special effects using the image stack. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Dayton in view of Xu and Joidon. As such, it is respectfully requested that Claims 3 and 17 be allowed based on the aforementioned claim language.

F. **The 35 USC 103 Rejection of Claims 14, 26 and 27.**

Claims 14, 26 and 27 were rejected under 35 USC 103(a) as being unpatentable over Dayton and Xu (as discussed above) in further view of Okamoto et al (U.S. Patent No. 5754618), herein after Okamoto. The Examiner contended that though Dayton and Xu do not teach applying a surface filter that operates on a given surface through the image stack and a surface within the image stack that is user defined, Okamoto

teaches this feature. The applicants respectfully disagree with this contention of obviousness.

As discussed above, the applicants' claimed invention employs an "image stack" in easily combining individual images into an enhanced composite image. An *image stack* is a set of identically sized registered images (e.g., the same pixel in each image represents more or less the same thing) that may originate from any stationary still or video camera. One way to envision an image stack is as a three dimensional (3D) collection of pixels defined by a set of images (or a short video). In the 3D pixel set, the normal *X* and *Y* dimensions define the coordinates of a single image. The *Z* (or time) dimension defines which image in the stack (or what point in time in a video).

As mentioned previously, neither Dayton nor Xu teach the applicants' claimed image stack which may be used for a variety of applications such as, for example, creating high dynamic range images, combining images captured under different lighting conditions, removing objects from images, and combining images captured at multiple points in time or with different focal lengths.

Okamoto also does not teach the applicant's claimed image stack wherein the third dimension represents time.

Additionally, the Dayton, Xu and Okamoto references do not teach the advantageous features of the applicants' claimed invention such as being able to create a variety of special effects using the image stack. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Dayton in view of Xu and Okamoto. As such, it is respectfully requested that Claims 14, 26 and 27 be allowed based on the aforementioned claim language.

G. <u>The 35 USC 103 Rejection of Claims 15, 24 and 25.</u>

Claims 15, 24 and 25 were rejected under 35 USC 103(a) as being unpatentable over Dayton and Xu (as discussed above) in further view of Chuang et al., "Video Matting of Complex Scenes", herein after Chuang. The Examiner contended that though Dayton and Xu do not teach applying a mat filter that produces a mat of a given portion of the image stack, Chuang teaches this feature. The applicants respectfully disagree with this contention of obviousness.

As discussed previously neither Dayton nor Xu teach the applicants' claimed image stack wherein the images are taken from the same point of view.

Chuang also does not teach the applicant's claimed image stack.

Additionally, the Dayton, Xu and Chuang references do not teach the advantageous features of the applicants' claimed invention such as being able to create a variety of special effects using the image stack. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Dayton in view of Xu and Chuang. As such, it is respectfully requested that Claims 15, 24 and 25 be allowed based on the aforementioned claim language.

H. <u>The 35 USC 103 Rejection of Claim 38.</u>

Claim 38 was rejected under 35 USC 103(a) as being unpatentable over Dayton and Xu (as discussed above) in further view of Funayama et al. (U.S. Patent No. 6,389,155), herein after Funayama. The Examiner contended that though Dayton and Xu do not teach a paint brush function that transfers all pixels associated with a face from a source image to a composite image whent said paint brush function is used to select a portion of a face, Funayama teaches these features. The applicants respectfully disagree with this contention of obviousness.

Neither Dayton nor Xu teach the applicants' claimed image stack which may be used for a variety of applications such as, for example, creating high dynamic

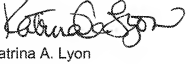
range images, combining images captured under different lighting conditions, removing objects from images, and combining images captured at multiple points in time or with different focal lengths.

Funyama also does not teach the applicant's claimed image stack.

Additionally, the Dayton, Xu and Funayama references do not teach the advantageous features of the applicants' claimed invention such as being able to create a variety of special effects using the image stack. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Dayton in view of Xu and Funayama. As such, it is respectfully requested that Claim 38 be allowed based on the aforementioned claim language.

In summary, it is believed that the claims 1-22 are in condition for allowance. Allowance of these claims at an early date is courteously solicited.

Respectfully submitted,



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